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Features of Prolonged Grief Symptoms in Chinese and Swiss Bereaved Parents

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Abstract: This study investigates clinical expressions of prolonged grief in samples of 32 Chinese and 33 Swiss bereaved parents, according to the proposed *International Classification of Diseases, 11th Revision* model of prolonged grief disorder (PGD). Sex differences and predictors (cultural attitudes, sense of coherence, and posttraumatic growth) of PGD were analyzed. In result, after controlling for sociodemographic and loss-related sample differences, both samples showed similar PGD symptom profiles, with Swiss parents exhibiting more severe grief-related preoccupation and Chinese parents exhibiting some accessory symptoms and functional impairment to a greater extent. Multivariate analyses revealed for the Chinese sample primary predictions of PGD by life satisfaction, general health and one's world view (social cynicism) and for the Swiss sample by female sex, sense of coherence, and life satisfaction. The findings substantiate the basic appropriateness of the *International Classification of Diseases, 11th Revision* PGD in distinct cultural groups and may contribute to a better understanding of grief expression and its potential predictors across different cultures.

Key Words: Bereaved parents, cross-cultural psychiatry, prolonged grief, world views

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The death of a child is considered one of the most distressing causes of bereavement across cultures and ethnicities (Bergstraesser et al., 2015; Dyregrov and Dyregrov, 1999; Lannen et al., 2008; Laurie and Neimeyer, 2008; Li et al., 2003b; Lohan and Murphy, 2006; Meert et al., 2011). As the loss of a child goes against the expected and natural order of life events, bereaved parents may find it difficult to accept the reality and experience deepest sorrow along with negative emotions such as yearning, guilt, shame, anger, regret, or self-blame (Barr and Cacciatore, 2008; Cacciatore, 2010). These make the mourning process prolonged and complicated. Moreover, taking a new role as "a surviving parent without the child," the bereaved show difficulties to move on in life. They are not only at an elevated risk to physical and mental problems (Lannen et al., 2008; Li et al., 2002; Li et al., 2003a) because of constant psychological stress and deceased self-caring, but are also confronted with the challenges to reconstruct the meaning of life (Lichtenthal and Breitbart, 2015) and sense of identity (O'Connor and Barrera, 2014). Therefore, higher rates of prolonged grief (PG) have been observed in bereaved parents, which has a long-term effect (Dyregrov and Dyregrov, 1999; Meert et al., 2011).

Grief and mourning have been analyzed by a variety of indicators. For clinical purposes, in recent years, the concept of PG—or the closely related prolonged grief disorder (PGD)—has become the particular focus of researchers and therapists (Boelen and Prigerson, 2007; Goldsmith et al., 2008; Maccallum and Bryant, 2013; Maercker and Lalor, 2012; Mancini et al., 2012; Prigerson et al., 2009). In the process of preparing the 11th version of the *International Classification of Diseases* (*ICD-11*) by the World Health Organization, a revised concept of PGD was proposed as a separate disorder belonging to the new category of "disorders specifically associated with stress," next to posttraumatic stress disorder and adjustment disorder (Maercker et al., 2013). Prolonged grief disorder is defined here by the core symptoms of yearning and longing for the deceased or preoccupation with the deceased or the circumstances of the death, failure to adapt to symptoms such as persistent sleep difficulties, a wide range of accessory symptoms, and significant impairments in the person's function. Although this proposal included cross-cultural considerations, to our knowledge, thus far only few studies have conducted cultural comparison in PG expressions. In particular, no empirical investigation has included a sample from a non-Western nation. Eastern parents may be distinguished from bereaved European and American parents because of the East's collectivism and family-centered culture (Pressman and Bonanno, 2007; Triandis et al., 1990). The present study was conducted in the sample cases of Chinese and Swiss bereaved parents. Living conditions and cultural difference between China and Switzerland provide a set of historical, social, and environmental contexts for divergent realities in the manner of expressing grief and its potential predictors (Rosenblatt, 2008; Stroebe and Schut, 1998). As China is a family-centered society whose traditional culture views the loss of a generation as a taboo associated with numerous superstitions and customs, Chinese parents are confronted with robust secondary stressors in the wake of bereavement such as cultural stigma, weak social support, and financial problems (Zheng and Lawson, 2015). We thus speculated that the Chinese parents would manifest more severe grief symptoms in functional impairments and accessory symptoms (e.g., the feelings of loss of self and meaning of life) than Swiss parents.

When studying PG or bereavement outcome, knowledge of risk and protective factors is of great interest because it could enhance understanding of individual differences in adjustment to bereavement (Stroebe et al., 2006). Stroebe et al. (2007) summarized situational, personal, and interpersonal characteristics as risk or protective factors that affected grieving processes. For example, previous studies have revealed that the cause of child's death (Lohan and Murphy, 2006), the age of the child at death, the length of bereavement (Keesee et al., 2008), and the circumstances surrounding the death (Wijngaards-de Meij et al., 2008a) were associated with the severity of PG symptoms of bereaved parents. More recently, positive psychological factors became more prominent in trauma and stress-related psychopathology (Southwick et al., 2014; Triplett et al., 2012). The present study includes such factors as sense of coherence (in its recently revised version from Bachem and Maercker, 2016) and posttraumatic growth (Büchi et al., 2007; Engelkemeyer and Marwit, 2008), because they are widely used as personal indicators of psychological resilience or health maintenance in clinical and health psychology. Noteworthy, when it comes to different cultures, apart from life circumstances and satisfaction (Martikainen and Valkonen, 1998; Stroebe et al., 2006), indicators of cultural or societal attitude differences are important because they allow meaningful comparisons between different nations (Bond et al., 2004; Leung et al., 2002). Taken together, our study attempted to integrate multiple dimensions of grief-related risk and protective factors across situational, intrapersonal, and social/cultural characteristics, which might

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facilitate a better understanding of the cultural differences in bereaved parents' grief expression. We assumed that marked national differences in living conditions and social beliefs would be robust predictive potentials to the severity of PG in both Chinese and Swiss bereaved parents.

The analysis presented here seeks to investigate differences in the pattern of PGD symptoms in China and Switzerland as representatives for an Eastern and a Western society. In addition, sex differences in grief expression were investigated. Finally, a multivariate regression searched for significant relative predictors for PG symptoms in the 2 countries, incorporating demographic factors, loss-related factors, psychological protective factors, world-view attitudes (i.e., social axioms), and living conditions. All analyses include a control for sample differences because the 2 cross-national samples differ with regard to several sociodemographic and loss-related variables.

METHODS

Participants

Questionnaires and interview data were collected as components of a larger cross-cultural project on "prolonged grief and autobiographical memory in bereaved parents" in Beijing and Chengdu in China and the German-speaking region of Switzerland. This project concerns on the grief experience in adult and middle-aged parents (up to 65 years old), in case of the degenerative effect on memory function. Their deceased child was at least 6 months old when he/she died, because there are still somewhat unclear theoretical positions about equalizing child loss and perinatal loss (Walsh, 2010). Bereavement period ranged from 6 months and is open to 10 years for recruitment reason. Six months postbereavement is the earliest period required for diagnosis of PGD. Previous follow-up studies have found that some bereaved parents could remain static or deteriorated in the grieving process after 10 years of their child's death (Dyregrov and Dyregrov, 1999; Rubin and Shechory-Stahl, 2012).

Chinese participants were recruited online or through self-help groups or social support groups by government or local organizations. In Switzerland, some of the participants received information regarding the study on online forums or from posters in supermarkets or from self-help groups; others were recruited from previous grief studies (Bachem and Maercker, 2016; Bergstraesser et al., 2015). In total, 49 Chinese and 38 Swiss parents expressed their willingness to participate. Of them, 36 Chinese and 34 Swiss participants met the inclusion/

TABLE 1. Demographic and Loss-Related Characteristics of 2 Samples

	Chinese	Swiss	Group Difference (F/χ^2)
Demographic characteristics			
Sex, n (valid %)			0.40
Female	22 (68.8)	25 (75.8)	
Male	10 (31.3)	8 (24.2)	
Age, mean (SD), y	55.94 (6.67)	44.64 (7.71)	39.64*
Education, y	10.59 (2.38)	15.74 (4.61)	31.72*
Educational level, n (valid %)			19.06*
Junior middle school or lower	14 (43.8)	1 (3.0)	
High middle school	7 (21.9)	22 (66.7)	
Higher education (≥college or similar)	11 (34.4)	10 (30.3)	
Marital status			7.81**
Single	0	7 (21.2)	
Married	27 (84.4)	23 (69.7)	
Separated, divorced, or widowed	5 (15.6)	3 (9.1)	
Loss-related characteristics			
Bereavement period, mean (SD), y	4.16 (2.93)	3.27 (2.64)	5.45**
Age of dead child, mean (SD), y	25.41 (6.78)	9.32 (7.58)	78.78*
Sex of dead child, n (valid %)			3.34***
Female	6 (18.8)	13 (39.4)	
Male	26 (81.3)	20 (60.6)	
Cause of death, n (valid %)			7.57***
Natural accident	1 (3.1)	5 (15.2)	
Human-made accident	7 (21.9)	5 (15.2)	
Illness	24 (75.0)	19 (57.6)	
Suicide	0	4 (12.1)	
Unexpected death, n (valid %)	19 (59.4)	15 (45.5)	1.26
Previous abortion experience, no. yes (valid %)	24 (75.0)	16 (48.5)	4.83**
Other bereavement after child's death, no. yes (valid %)	14 (43.8)	6 (18.2)	6.33**
Only 1 child, no. yes (valid %)	30 (93.8)	5 (15.2)	40.39*

The sample differences in the age and educational year of parent, the age of the dead child, and bereavement period were tested by 1-way analysis of variance in whole group; other categorical variables such as sex, educational level, marital status, and so on, were examined by χ^2 test.

*$p < 0.001$.

**$p < 0.05$.

***$p < 0.08$.

exclusion criteria. Four Chinese and 1 Swiss participants had missing data in the questionnaires. Thus, the whole sample in the present study comprised 32 bereaved Chinese parents (11 male; age range, 37–65 years old), whose children died between 1 and 10 years ago, and 33 German-speaking Swiss parents (8 male; age range, 33–65 years old) whose children died between 0.5 and 6 years ago. Table 1 depicts details of the sample characteristics. The age of the parent, the age of the child, and the bereavement period were significantly different in the 2 country samples ($p < 0.05$), as were education, marital status, previous abortion experience, and other bereavement following the child's death.

Procedure and Measures

The study was conducted in accordance with the guidelines of the ethics review board of the University of Zurich. Individuals who chose to participate were invited to an interview and provided written informed consent in advance. The interview was conducted by trained graduate students in clinical psychology. The training was provided by the first author and for an average 10 hours in duration, including group workshops and individual training.

A structured interview was conducted to obtain participants' sociodemographic information and loss-related characteristics. Moreover, participants provided information regarding whether they (or their wives) had experience with abortion before the child's death (spontaneous, elective, or forced abortion), because previous abortion could result in postabortion grief that might have a long-term effect in terms of their relationships, sense making, and sense of self (Trybulski, 2005). Other significant bereavements (e.g., close friends, important relatives, parents, brothers or sisters, etc.) after the child's death were also enquired.

In addition, participants were introduced to using 4- or 5-point scales to evaluate their living conditions in terms of general health ("How would you describe your health in general?": 1 = bad, 5 = excellent), financial situation ("How would you describe your current financial situation?": 1 = bad, 4 = very good), and life satisfaction ("How satisfied are you with your current life?": 1 = not at all satisfied, 5 = extremely satisfied). After the interview, a self-reported questionnaire package was provided.

To assess PG symptoms, the study used a newly compiled scale: the *ICD-11* Prolonged Grief Disorder Scale (PGDS). This scale is an extended version of the Inventory of Complicated Grief–Revised (Prigerson and Jacobs, 2001) and comprises 20 previously used items and 3 new items based on the newly proposed diagnosis of PGD in the *ICD-11* (Maercker et al., 2013). The new items were "I feel guilty about mistakes I made with regard to __'s death," "It is really difficult for me to remember in detail happy moments with or images of __ from the times before he/she died," and "I no longer feel able to experience happiness, contentment, or joy since the loss of __." The PGDS was adapted to refer to the death of one's child as the reference bereavement. The participants were requested to describe how often they had felt grief over the past month because of losing their child, using a 5-point scale: 1 = almost never (less than once a month), 2 = rarely (monthly), 3 = sometimes (weekly), 4 = often (daily), and 5 = always (several times a day). This scale was utilized in 2 manners. First, the sum scores were obtained for the intensity of PG and subordinate symptom clusters (preoccupation, failure to adapt, accessory symptoms, and functional impairment). Second, to estimate the frequency of extremely severe symptoms, each PGDS item was further recoded: item values of 4 "often (once a day)" and 5 "always (several times a day)" were coded as 1 meaning "above clinical threshold," and other scores were coded as 0, indicating "below clinical threshold." In the present study, the previously used 20 items used the German and Chinese versions of the Inventory of Complicated Grief–Revised, and the 3 new items were back translated by German-English or Chinese-English bilingual researchers. The internal consistency (Cronbach α) was 0.93 for the Chinese sample and 0.92 for the Swiss sample.

The Beck Depression Inventory Short Form (13 items) is commonly used to measure the intensity of depressive symptoms in clinical and nonclinical populations (Beck et al., 1979; Steer et al., 1986). Each item offers 4 alternative statements rated from 0 to 3 in terms of intensity based on the condition within the previous week. In the present study, the internal consistency (Cronbach α) was 0.89 in the Chinese sample and 0.86 in the Swiss sample.

The Posttraumatic Growth Inventory (PTGI) (Tedeschi and Calhoun, 1996) is a widely used measure of posttraumatic growth in a variety of populations and measures the degree to which an individual experiences significant positive change following a struggle with adversity. In the present study, we used the 10-item short version developed by Cann et al. (2010) based on 16 separate studies. This short form confirmed the 5-factor structures comprising personal strength, relating to others, new possibilities, appreciation of life, and spiritual change. We selected the target items from the Chinese (Chen et al., 2015) and German 21-item PTGI (Maercker and Langner, 2001). The present study used the sum score of the PTGI to represent individuals' posttraumatic growth in the wake of the child's death. Ratings were based on a 6-point Likert scale (1 = not at all, 6 = very strongly). The internal consistency (Cronbach α) for the total scale showed a high consistency of 0.91 in the German sample (Maercker and Langner, 2001) and 0.95 in the Chinese study (Chen et al., 2015).

The Sense of Coherence Scale–Revised (Bachem and Maercker, 2016) is based on a newly modified concept of sense of coherence that was originally developed by Antonovsky (1979) as a widely used indicator of psychological resilience or health maintenance. The revised sense of coherence is conceptualized as a general or metacognitive ability to perceive life phenomena as connected to one another and to balance positive and negative appraisals of life experiences. It is estimated by the sum score of a new 13-item questionnaire comprising 3 factors: manageability, reflection, and balance. Items were rated on a 5-point scale in terms of the extent to which each statement reflects the participant's own attitude (1 = not at all, 5 = very much). The Chinese version was back translated by Chinese-English bilingual psychologists and supervised by the Sense of Coherence Scale–Revised authors. A previous study of a Swiss sample showed adequate reliability and validity with an internal consistency of Cronbach α between 0.75 and 0.81, and for a long-term retest, the Cronbach's α was 0.85. In the current study, the internal consistency of the Chinese version was 0.72.

The Social Axioms Survey was used to measure 5 basic cultural social beliefs that are assumed to differ between ethnicities or regional types of world view (Malham and Saucier, 2014): reward for application, social cynicism, social complexity, fate control, and religiosity. Reward for application refers to a belief in the utility of effort, social cynicism represents a negative belief in human nature, social complexity is the belief in multiple manners in which to achieve a given outcome, fate control refers to a belief that life events are predetermined, and religiosity refers to believing in the reality of a supreme being and positive function of religious practice (Bond et al., 2004). We used a short form of the Social Axioms Survey, with 8 items tapping each dimension rated on a 5-point scale (1 = strongly disbelieve to 5 = strongly believe). The internal consistency (Cronbach α) for subscales ranged between 0.68 and 0.85 in a previous cross-cultural study including Chinese and German samples (Leung et al., 2011).

Statistical Analysis

We used SPSS 19.0 to execute whole-group statistical analysis (n = 65) and analyses for the national subgroups. Analysis of covariance (ANCOVA) was used to test the cultural difference on all scales (Table 2) and PG symptoms (Table 3), controlling for the age of parent and child and the bereavement period, because they were correlated with symptom severity and differed between 2 samples.

TABLE 2. Mean, SD, and Sex Effect of Trauma-Related Scales, and Their Group Differences in 2 Samples (n = 65)

	Chinese		Swiss		Group Difference (F)	
	Mean (SD)	Sex Effect (F)	Mean (SD)	Sex Effect (F)	Without Covariates	After Controlling[a]
Prolonged grief (PGDS sum)	63.09 (21.31)	0.01	54.58 (14.79)	4.26*	3.52**	0.34
Preoccupation	14.16 (5.11)	0.86	15.91 (3.00)	4.77*	2.86	7.38***
Failure to adapt	14.91 (6.07)	0.06	12.67 (4.21)	2.97	3.01	0.75
Accessory symptoms	30.81 (11.15)	0.20	23.88 (8.33)	2.39	8.10***	0.14
Functional impairment	3.22 (1.48)	0.00	2.12 (1.22)	8.77***	10.72***	1.59
Depression (Beck Depression Inventory sum)	15.66 (8.87)	1.41	6.12 (4.39)	4.59*	30.46****	3.24**
General living condition						
Life satisfaction	2.28 (1.14)	0.88	3.79 (1.05)	0.25	30.58****	3.85**
Perceived health	2.22 (1.07)	1.90	3.24 (0.83)	0.26	18.64****	0.07
Financial situation	1.56 (0.62)	1.00	3.00 (0.56)	2.19	96.68****	49.75****
Posttraumatic growth	33.66 (11.36)	0.08	39.55 (8.02)	4.93*	5.86*	0.50
Sense of coherence	45.47 (6.96)	0.00	47.88 (5.53)	2.00	2.40	0.21
Social axioms						
Reward for application	28.25 (5.07)	0.11	27.35 (3.97)	0.33	0.64	2.80
Social complexity	29.44 (3.36)	0.02	32.46 (2.89)	0.86	15.14****	8.80***
Fate control	24.91 (5.54)	0.17	23.46 (3.75)	1.70	1.52	2.99
Religiosity	20.78 (6.45)	0.03	21.65 (5.22)	0.59	0.36	0.08
Social cynicism	26.44 (5.24)	0.11	23.84 (4.46)	0.24	4.62*	0.29

[a]The culture differences were tested by controlling for the age of parent, the age of the dead child, and bereavement period.

*$p < 0.05$.

**$p < 0.08$.

***$p < 0.01$.

****$p < 0.001$.

To identify risk factors to or protective factors against PG and explain their relative effect on cultural differences between the 2 countries, a 5-step hierarchical linear regression analysis was adopted in 2 subgroups. In step 1, the block of demographic variables included sex, age, years of education, and the marital status of the bereaved parents. Step 2 investigated risk factors related to the loss (i.e., time since loss, sex and age of the lost child, cause of death, expectedness of the death, previous abortion experience, other bereavements after child's death). Step 3 only added the sum score of sense of coherence as a protective psychological factor because of its significant correlation with PG. In step 4, social cynicism and religiosity from the Social Axiom Survey were added as world-view attitudes; finally, step 5 involved 3 variables of self-rated general living conditions (i.e., perceived health, financial situation, and life satisfaction). We compared the contributions of each block and the crucial variables that approached significance in each step.

RESULTS

Characteristics of the PG Symptoms

The clinical features of the Chinese and Swiss bereaved parents are shown in Table 2 for the different dimensional outcomes. It was our intention to control for background variables that were associated with symptom severity in the subsequent analysis. Therefore, we examined associations of symptom severity with demographic (i.e., age, sex, education in years, educational level, and marital status) and loss-related variables (i.e., bereavement period, the age and sex of dead child, cause of death, expectedness of the death). For the Chinese parents, only bereavement period had a trend correlation with grief preoccupation severity (Spearman $r = -0.32$, $p = 0.08$). For the Swiss parents, the failure-to-adapt symptom severity significantly correlated with the age of the parents (Spearman $r = 0.38$, $p = 0.03$) and the age of the dead child (Spearman $r = 0.46$, $p = 0.008$), and the depressive symptom severity was correlated with the age of the dead child (Spearman $r = 0.51$, $p = 0.002$). In the subsequent analysis, we controlled the bereaved period, the age of the parents and the dead child, because these variables were also significantly different between the 2 country samples (Table 1).

For a comparison of the samples, because of the substantial differences between the outcomes, only the controlled group comparisons are reported here. After controlling for the effect of the age of the parent, the age of the child, and the bereavement period, the grief symptom cluster of preoccupation with the child's death was significantly higher in the Swiss than in the Chinese sample ($F_{1,60,covariates} = 7.38$, $p = 0.01$, partial $\eta^2 = 0.11$). The Chinese sample tended toward more severe depressive symptoms ($F_{1,60,covariates} = 3.24$, $p = 0.08$, partial $\eta^2 = 0.05$).

Sex differences were indicated in the Swiss sample, but not in the Chinese sample. Swiss mothers suffered from more intensive depression ($mean_{female}$ [SD] = 7.00 [4.46], $mean_{male}$ [SD] = 3.38 [2.92]; $F_{1,31} = 4.59$, $p = 0.04$, effect size $r = 0.43$) and PG ($mean_{female}$ [SD] = 57.44 [14.73], $mean_{male}$ [SD] = 45.62 [11.64], effect size $r = 0.41$). In particular, sex differences for preoccupation with the child's death and functional impairment grew in significance (Table 2). When diagnostic assignments of PGD and its symptoms were analyzed, the following pattern emerged (Table 3). First, the core symptoms, "yearning and longing," were most frequent in both the Chinese (62.5%) and the Swiss (78.8%) samples. For the Swiss, the failure-to-adapt symptom, "drawn to related places and things" (57.6%), was also prevalent. Highly frequent accessory symptoms were observed in Chinese parents in terms of "feeling alone" (62.5%), "feeling that life is empty or meaningless" (59.4%), and "numbness to happiness, contentment, or joy" (59.4%), whereas the Swiss showed relatively lower levels of accessory symptoms.

TABLE 3. Frequency of PG Symptoms Above Clinical Threshold

		Chinese (%)[a]			Swiss (%)[a]			Group Difference (F)	
Subgroup	Item	Female (n = 22)	Male (n = 10)	Sex Effect (χ^2)	Female (n = 25)	Male (n = 8)	Sex Effect (χ^2)	Without Covariates	After Controlling[b]
Preoccupation	1. Preoccupation influences normal life	31.8	50	0.97	16.0	0	1.46	5.99*	0.01
	2. Upsetting preoccupation	18.2	40	1.75	60.0	50.0	0.25	7.73**	4.45*
	4. Yearning and longing	59.1	70	0.35	84.0	62.5	1.68	2.09	1.87
	14. Hearing the deceased's voice	27.3	40	0.52	12.0	0	1.06	5.23*	1.41
	15. Seeing the deceased	27.3	10	1.20	52.0	12.5	3.87*	3.19***	4.68*
Failure to adapt	3. Difficulty accepting the loss	50	50	0	24.0	12.5	0.48	6.28*	1.31
	5. Drawn to related places and things	50	50	0	64.0	37.5	1.74	0.37	2.74
	7. Disbelieving the loss	40.9	20	1.33	20.0	0	1.89	3.30***	0.09
	8. Feeling stunned, dazed, or shocked	36.4	30	0.12	12.0	0	1.06	6.58*	0.35
	10. Having lost interest in other people/detachment	31.8	30	0.01	20.0	12.5	0.23	1.48	0.20
Accessory symptoms	6. Anger related to the death	18.2	10	0.35	20.0	0	1.89	0.00	0.01
	9. Inability to trust others	27.3	10	1.20	12.0	0	1.06	2.04	0.17
	11. Sharing behaviors, symptoms, or characteristics with the deceased	18.2	0	2.08	8.0	0	0.68	0.79	1.85
	12. Avoidance of reminders of the loss	22.7	30	0.19	0	0	–	10.66**	3.56***
	13. Feeling that life is empty or meaningless	59.1	60	0.002	8.0	0	0.68	30.31****	5.57*
	16. Feeling unfair to survive	31.8	30	0.01	40.0	0	4.59*	0.01	2.44
	17. Bitterness related to the loss	22.7	30	0.19	16.0	0	1.46	1.78	2.87
	18. Envying others	9.1	10	0.01	12.0	0	1.06	0.00	1.08
	19. Feeling alone	63.6	60	0.04	24.0	12.5	0.48	13.41****	1.81
	21. feeling guilty about mistakes	31.8	20	0.48	12.0	25.0	0.80	1.61	0.18
	22. Difficulty to remember detailed happy moments	13.6	30	1.21	20.0	0	1.89	0.15	0.25
	23. Numbness to happiness, contentment or joy	68.2	40	2.26	24.0	12.5	0.48	11.26****	0.17
Functional impairment	20. Impairment in social, occupational, or other functioning	54.5	30	1.66	20.0	0	1.89	8.44**	4.96*

[a]*ICD-11* PGDS is a 5-point self-reported scale from "less than once a month" to "several times a day"; clinical threshold is larger than 3 = sometimes ("weekly").

[b]The culture differences were tested by ANCOVA with controlling the age of parent, the age of the dead child, and bereavement period.

*$p < 0.05$.

**$p < 0.01$.

***$p < 0.08$.

****$p < 0.001$.

After controlling for the covariates of the age of the parent, the age of the child, and the bereavement period, more Swiss parents reported more frequent preoccupation with the child's death ("upsetting preoccupation," partial $\eta^2 = 0.07$; "seeing the deceased," partial $\eta^2 = 0.07$). By contrast, more Chinese parents reported accessory symptoms than Swiss parents ("feeling that life is empty or meaningless," partial $\eta^2 = 0.09$), as well as higher functional impairment (partial $\eta^2 = 0.08$).

Group Differences and Associations With Resilience Measures

Next, potential predictors of PG were descriptively compared and then analyzed according to their associations with PG symptoms (Tables 2 and 4). We report differences and significant associations only after controlling for the age data and bereavement periods.

Chinese parents reported lower life satisfaction in general ($F_{1,60} = 3.85$, $p = 0.06$, partial $\eta^2 = 0.06$) and poorer financial situations ($F_{1,60} = 49.75$, $p < 0.001$, partial $\eta^2 = 0.45$). Life satisfaction had high negative correlations with PG in both samples. Regarding the worldview attitudes (i.e., social axioms), Chinese participants showed significantly lower social complexity than Swiss participants did ($F_{1,60} = 8.80$, $p = 0.004$, partial $\eta^2 = 0.13$). Both sum scores of sense of coherence and posttraumatic growth did not show significant group differences after controlling the covariates. Only the Swiss sample showed a negative correlation between sense of coherence and PG, particularly in the accessory symptoms. Regarding social axioms, Swiss participants had a significantly higher belief in social complexity than the Chinese did ($F_{1,60} = 8.80$, $p = 0.004$, partial $\eta^2 = 0.13$). Social cynicism was positively correlated with grief and depression for Chinese participants, and religiosity was negatively correlated with PG in Swiss participants.

Hierarchical Linear Regression Models

Finally, 2 separate hierarchical regressions for the 2 national samples were conducted to compare the predictors of PG in the different samples (Table 5). Demographic variables, loss-related risk factors, psychological protective factors, social axioms, and living conditions were entered as blocks in 5 steps. With regard to protective factors and social axioms, we used only sense of coherence, social cynicism, and religiosity because of their significant correlations with PG in Table 4.

For the Chinese sample, only the specific social axiom of cynicism and 2 measures of living conditions showed significance. For the Swiss sample, demographic variables contributed to a larger variance

TABLE 4. Partial Correlation Between Trauma-Related Scales in Each Sample After Controlling the Age of the Parent, the Age of the Child, and Bereavement Period (*r*)

	PG											
	Sum Score		Preoccupation		Failure to Adapt		Accessory Symptoms		Functional Impairment		Depression	
	Chinese	Swiss	Chinese	Swiss	Chinese	Swiss	Chinese	Swiss	Chinese	Swiss	Chinese	Swiss
Life satisfaction	−0.73*	−0.62*	−0.66*	−0.41**	−0.70*	−0.52***	−0.64*	−0.67*	−0.43**	−0.09	−0.53***	−0.57***
Perceived health	−0.36****	−0.44**	−0.45**	−0.33****	−0.48**	−0.46**	−0.20	−0.41**	−0.15	−0.12	−0.12	−0.32
Financial situation	−0.24	−0.33****	−0.24	−0.16	−0.32	−0.44**	−0.16	−0.35****	−0.15	0.24	−0.08	−0.28
Posttraumatic growth	0.33	0.15	0.28	0.36****	0.14	0.24	0.40**	−0.01	0.12	0.21	0.30	−0.07
Sense of coherence	−0.13	−0.35****	−0.02	−0.14	−0.23	−0.32	−0.07	−0.43**	−0.25	0.13	0.03	−0.39**
Reward for application	−0.32	−0.20	−0.19	−0.14	−0.27	−0.20	−0.33	−0.22	−0.22	0.14	−0.25	−0.27
Social complexity	0.02	−0.24	−0.11	−0.19	0.13	−0.25	−0.02	−0.27	0.19	0.27	0.22	−0.17
Fate control	0.03	−0.11	−0.11	0.02	−0.13	−0.13	0.15	−0.17	0.26	0.20	0.07	−0.20
Religiosity	−0.13	−0.49***	−0.18	−0.21	−0.22	−0.40**	−0.04	−0.53***	0.04	−0.34****	−0.23	−0.43**
Social cynicism	0.39**	0.17	0.28	0.13	0.35****	0.12	0.38**	0.23	0.29	−0.18	0.36****	0.11

*$p < 0.001$.
**$p < 0.05$.
***$p < 0.01$.
****$p < 0.08$.

of PG ($\Delta R^2 = 0.23$, $\Delta F_{4,28} = 2.08$, $p = 0.11$), primarily affected by sex. In step 3, Swiss parents who had a stronger sense of coherence showed less severe PG ($\Delta R^2 = 0.11$, $\Delta F_{1,20} = 4.62$, $p = 0.04$). In step 5, life satisfaction also predicted PG. In both samples, there was no significant contribution from loss-related risk factors.

DISCUSSION

The present study portrayed the features of bereaved parents' PG in different cultural contexts in terms of the severity of symptoms and predictive roles of selected risk and protective factors. The new construct of PG proposed by *ICD-11* was substantiated in our representatives of Eastern and Western cultures. Nevertheless, some cultural differences appear in the intensity and clinical risk of typical symptoms. Swiss parents showed stronger preoccupation symptoms (i.e., upsetting preoccupation with the child's death and continuing to see the deceased) than Chinese parents. The evidence indicated that Chinese parents had 1 elevated accessory symptom (i.e., feeling that life is empty or meaningless), higher grief-related functional impairment, and higher levels of depressive symptoms. Concerning sex differences, the findings are consistent with previous studies in the groups of Western samples (Barrera et al., 2009; Bergstraesser et al., 2015; Wijngaards-de Meij et al., 2005) that Swiss mothers have a higher level of PG than Swiss fathers. Notably, this sex difference was not observed in the Chinese sample. Furthermore, multiple dimensions of factors including demographic information, situational factors, psychological protective factors, social axioms, and living conditions were utilized to predict the intensity of PG in the 2 samples. Life satisfaction played a significant role in both samples. Other predictive factors were personal features (i.e., sex and sense of coherence) in the Swiss and cultural beliefs or world views (i.e., social cynicism) in the Chinese. Thus, the 2 samples showed distinguishing patterns in the severity of PG, which appears to be affected by personal, social, and cultural factors.

Our findings first provided basic evidence of the appropriateness of the *ICD-11* proposal for PGD in different cultures. Nevertheless, some differences in the symptom patterns between the 2 samples were

TABLE 5. Results for Separated Hierarchical Linear Regression Analyses to Predict the Severity of PG in Each Sample

	Chinese					Swiss				
	R^2	ΔR^2	ΔF	Significant Variables	β	R^2	ΔR^2	ΔF	Significant Variables	β
Step 1: demographic variables	0.04	0.04	0.30			0.23	0.23	2.08	Sex	−0.40*
Step 2: loss-related risk factors	0.30	0.26	1.07			0.39	0.16	0.81		
Step 3: psychological protective factors	0.31	0.01	0.16			0.51	0.11	4.62*	Sense of coherence	−0.38*
Step 4: world views	0.49	0.18	3.09**	Social cynicism	0.44*	0.54	0.04	0.70		
Step 5: living condition	0.89	0.39	14.71***	Life satisfaction	−0.75****	0.82	0.27	7.52****	Life satisfaction	−0.50*
				Perceived health	−0.32*					

*$p < 0.05$.
**$p < 0.08$.
***$p < 0.001$.
****$p < 0.01$.

observed. Recently, a growing body of research has investigated the prevalence and symptoms of grief in different nationalities, cultures, or populations (Fujisawa et al., 2010; Goldsmith et al., 2008; Langner and Maercker, 2005; Pressman and Bonanno, 2007; Stroebe and Schut, 2006). In particular, increasing evidence indicates the core symptoms of PGD across cultures when assessed by a precursor version of *ICD-11* PGD (Prigerson et al., 2009). However, to date, no comparison between samples from Eastern and Western cultures has been reported. Interesting differences were observed in the prevalence, severity, and persistence of grief symptoms, supporting the perspective that PG symptoms should be considered within a social/cultural context. With regard to the new model of PGD, both Chinese and Swiss bereaved parents suffered from all of the proposed symptoms with few differences in severe symptoms. This suggests that the potential mechanism of grieving and mourning applies across cultures, although individual differences may occur during the grieving process. The effects from cultural contexts thus should be considered.

Our findings indicate that Swiss parents suffered profoundly from preoccupation with the deceased child, whereas Chinese parents suffered from elevated clinical risks in functional impairment and accessory symptoms such as losing one's belief in the meaning of life. Preoccupation with thoughts, images, and sounds related to the deceased composes 1 core set of grief reactions, which derive from the difficulty of accepting the reality of loss and activated attachment to the deceased (Shear and Shair, 2005). Similarly, separation distress was also found to be more common in Australian bereaved individuals than social and functional impairments, when Aoun et al. (2015) identified PG symptoms across low-, moderate-, and high-bereavement-risk groups. From the perspective of the dual process model of coping with bereavement by Stroebe and Schut (2010), the separation distress in Swiss parents can be regarded as a loss-orientation process during which feelings and actions are centered around personal perceptions and the connection between the parent and the child. The Chinese appear to tend toward a restoration orientation that addresses secondary stressors following the loss, such as rebuilding self-identity, reconstruction of one's world view, and adapting to or coping with subsequent problems posed by the altered life situation. Through the loss, the Chinese may be confronted with threats or challenges to social or occupational functions and spirituality. It may be argued that the Swiss parents were more vulnerable to mourn their loss than the Chinese parents because of the shorter bereavement period in the Swiss subsample. However, our results did not support this argument because the significant group difference in preoccupation emerged only when controlling for the sample difference in regard to the bereavement period.

It appears to be worthwhile to apply the perspective of culture differences in the self-construal and its relationship with coping style (Bailey and Dua, 1999; Jobson, 2009). Specifically, Swiss or middle-European mentalities are dominated by an individualistic culture (World Values Study Group, 1994) that is characterized by an independent self-construal and a priority in the private internal aspects of self and self-reliance. Independent self-construal helped Swiss parents focus on personal perceptions and their connection with the child, which resulted in apparent preoccupation with the deceased and increased levels of distress. By contrast, the interdependent self in the collectivistic Chinese culture emphasizes the public aspects of self and relies on social support (Jobson, 2009; Triandis et al., 1990). Apparently, Chinese parents tend to focus more on secondary stressors and long-term living conditions. Conversely, individualism or collectivism can provide a distinct culture-appreciated environment that the bereaved parents will confront, adapt to, or even struggle with during the grieving process. For example, a well-known Confucian saying, "Having no posterity is extremely nonfilial," addresses Chinese parents afflicted with guilt over family and relegates those parents to an inferior role in society. A collectivistic society may interfere with the grieving process and obstructs social functions if the society emphasizes a normal family structure. Therefore, future studies could further investigate the role of cultural representations in cultural differences in regard to the intensity of grief reactions and the coping with bereavement.

A second result relevant to cultural differences concerns the sex effect. The majority of previous studies on parental grief represented Western populations and consistently suggested that mothers showed higher levels of grief and depression and worse psychological health than fathers (Barrera et al., 2009; Bergstraesser et al., 2015; Rubin and Shechory-Stahl, 2012; Wijngaards-de Meij et al., 2005). The Swiss data support these findings. A widely accepted explanation may be the stronger bonding of a mother to a child. Specifically, in our findings, mothers exhibited more intensive preoccupation with the loss with a significantly higher clinical frequency of symptoms such as "seeing the deceased." This result corroborates the perspective of Wijngaards-de Meij et al. (2008b) that the mother is more involved in loss-orientated coping. Furthermore, a qualitative study regarding Swiss parental grief also illustrated the individual difference in dyadic coping styles (Bergstraesser et al., 2015). Mothers tended to seek social support and opportunities to share, whereas fathers behaved as loners who accepted the reality of death. Bergstraesser et al. (2015) speculated that the role distribution between parents allowed fathers to escape into professionalduties. Engaging in a profession before and after their child's death can help fathers not only escape from vivid memories at home but also maintain their identity and confront death with practical reality. Our results also illustrated that Swiss fathers appeared to be more impaired in their social functioning. Contrary to our general expectation, there was no significant sex difference in grief symptoms or depressive symptoms in Chinese parents. Previous grief studies of Chinese samples examining the bereavement following the loss of parent, child, partner, or sibling also did not find significant sex differences in the intensity of prolonged or complicated grief (He et al., 2013a and b). Hence, it is reasonable to assume that both Chinese fathers and mothers confront the loss of a child with similarly overwhelming grief and tremendous stress. This assumption implies possible differences in bereavement processes and coping with grief in the Chinese culture compared with more sex-specific manners of coping in Westernized countries.

Finally, a goal of this study was to investigate grief-related risk and protective factors and compare their contributions to the intensity of PG, aiming to portraying respective characteristics of each country and providing a better understanding of the cultural differences. In our findings, the grief severity of Swiss parents was profoundly influenced by intrapersonal factors such as sociodemographic variables and the psychological trait of sense of coherence, whereas Chinese parents' symptoms could be better predicted by loss-related situational factors and the culture-related world view. One of the 2 psychological protective factors, sense of coherence, explained significant portions of the variance in the Swiss sample but not in the Chinese group. Sense of coherence—measured by a revised concept (Bachem and Maercker, 2016)—refers to a metacognitive style of balancing the negative and positive sides of a stressful event, reflecting on a situation comprehensively and from various perspectives, and believing that experiences are manageable. It appears possible that this ability is more common in individuals in individualistic cultures such as Switzerland. When social axioms (i.e., reward for application, social complexity, fate control, religiosity, social cynicism) were investigated, only the subscale of social cynicism contributed to higher PG symptoms and only in the Chinese sample. Relevant psychopathological findings from other studies for this latter subscale are lacking. However, social cynicism as a socially oriented general belief is positively correlated with the societal values of power and conformity (Leung et al., 2007). Power and conformity values represent collectivist attitudes that were observed to be related to stress-associated symptoms (Maercker et al., 2009; Müller et al., 2011). Finally and not surprisingly, living conditions manifested the largest contributions to symptom severity in both countries, highlighting

the importance and possible priority to improve bereaved parents' living conditions in bereavement support work, particularly for Chinese bereaved parents. Life satisfaction—and in China, in addition, perceived health—predicted PG symptoms in addition to the preceding variables. Although parents' perceived living conditions have rarely been considered in previous studies, it makes sense that not only can bereavement degrade living conditions because of continuous life changes and challenges after losing a child, but also an unsatisfying life may cause the bereaved parents to stay persistently immersed in grief.

Our study had a number of limitations. First, as mentioned several times in the article, the study comprises 2 national samples with various important sampling differences, for example, the current age of the participants, the age of the child who died, causes of death, and sociodemographic differences. Although statistical methods such as ANCOVA were introduced to control these effects, conventional inference statistics are only applicable with restrictions for direct sample comparisons. Therefore, only the symptom pattern analysis is based on direct cross-national comparisons, and the final variance explanation analyses of the 2 samples were conducted independently. Second, this study utilized self-rating scales and not clinician ratings for primary variables, including the assessment of PG symptoms. However, personal rapport between participants and investigators was established in part by an introductory structured clinical interview. Third, the study remained cross-sectional. A prospective longitudinal design would be valuable to reveal parents' interactive relationships following the grieving process.

Despite these limitations, this is the first study to explore and compare PG symptoms in parents who lost a child on 2 different continents. In particular, the newly proposed construct of PG according to *ICD-11* received empirical support using 2 samples from different cultures. Thus, the current study contributes to research on diagnosis and intervention in cases of PG, indicating that such studies should consider individual differences in social and cultural contexts.

CONCLUSIONS

Across very distinct cultural contexts, the Chinese and Swiss bereaved parents who lost a child manifested core symptoms of PGD proposed by *ICD-11*, with cultural differences in the severity of some typical symptoms such as preoccupation and accessory symptoms. Particular predictors of personal, social, and cultural factors may contribute to a better understanding of the cultural features of grief expression.

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DISCLOSURE

The authors declare no conflict of interest.

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